- PATENT -

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Nakhjiri et al.	EXAMINER:	Shingles, Kristie D
SERIAL NO.:	10/720,708	GROUP:	2141
FILED:	11/24/2003	CASE NO.:	CE09292R

ENTITLED: METHOD AND APPARATUS FOR PPP LINK HANDOFF

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Mail Stop APPEAL BRIEF - PATENTS
Commissioner for Patents
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APPEAL BRIEF

Commissioner:

Pursuant to 37 C.F.R. §41.37, the appellants hereby respectfully submit the following Brief (in triplicate) in support of their appeal.

(1) Real Party in Interest

The real party in interest is Motorola, Inc.

(2) Related Appeals and Interferences

There are no related appeals or interferences known to appellant, the appellant's legal representative, or assignee that will directly affect, or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

Claims 17-20, 23-26, and 29-32 are pending and presently stand twice and finally rejected and constitute the subject matter of this appeal. Claims 1-16, 21, 22, 27 and 28 are canceled.

(4) Status of Amendments

An Amendment to the claims was filed on May 12, 2006 after the Final Rejection mailed on January 12, 2006. The Advisory Action of June 6, 2006, indicates that this Amendment was considered and entered. The claims as thus amended are included in the Claims Appendix attached hereto.

(5) Summary of Claimed Subject Matter

Claim 17, as amended, provides a method for point-to-point protocol (PPP) link handoff, the method including receiving, by a target access router (AR) (305), PPP context information from a source AR (306), establishing, by the target AR, a PPP link between the target AR and a remote unit (330) using the PPP context information, and receiving traffic information via a tunnel between the source AR and the target AR, wherein the beginning of a period of low remote unit data activity triggers establishing the PPP link. (page 7, lines 22-25; page 11, line 29 – page 12, line 6)

Claim 29, as amended, provides a target access router (AR) (305) that includes a network interface (304) and a processor (303), communicatively coupled to the network interface, adapted to receive, via the network interface, PPP context information from a source AR (306) and adapted to establish, via the network interface, a PPP link between the target AR and a remote unit (330) using the PPP context information and adapted to receive traffic information via the network interface and a tunnel between the source AR and the target AR, wherein the beginning of a period of low remote unit data activity triggers establishing the PPP link. (page 7, lines 22-25; page 11, line 29 – page 12, line 6)

(6) Grounds of Rejection to be Reviewed on Appeal

Claims 17, 20, 23-26, 29, 31 and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Barna et al. (U.S. Patent Application Publication Number 2002/0046277, hereinafter "Barna") in view of Krishnamurthi et al. (U.S. Patent Application Publication Number 2003/0174667, hereinafter "Krishnamurthi"), and claims 18, 19 and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Barna and Krishnamurthi in view of Lioy et al. (U.S. Patent Number 6,377,556, hereinafter "Lioy"). The appellants dispute these rejections.

(7) Argument

Rejections under 35 U.S.C. §112, first paragraph

None.

Rejections under 35 U.S.C. §112, second paragraph

None.

Rejections under 35 U.S.C. §102

None.

Rejections under 35 U.S.C. §103

Group 1 – Claims 17-20 and 23-26

Claim 17 provides (underlined language being relevant to the argument presented below):

17. A method for point-to-point protocol (PPP) link handoff comprising:
receiving, by a target access router (AR), PPP context information from a source AR;
establishing, by the target AR, a PPP link between the target AR and a remote unit using the PPP context information; and

receiving traffic information via a tunnel between the source AR and the target AR, wherein the beginning of a period of low remote unit data activity triggers establishing the PPP link.

In the Final Office Action mailed January 12, 2006 (hereinafter "FOA"), the Examiner cites Barna [0015, 0016, 0034-0037] and Krishnamurthi [0006-0009, 0019-0024] and the Krishnamurthi abstract as teaching the language of claim 17. In the *Response to Arguments* section of the FOA, the Examiner asserted that the beginning of a period of low remote unit data activity was not recited in the rejected claim. In response, the Appellants submitted that claim 17 includes the language, "wherein the beginning of a period of low remote unit data activity triggers establishing the PPP link." In the Advisory Action mailed April 24, 2006, the Examiner responds by asserting that Verma discloses that when the connection indicator detects loss of communication with the mobile node then the tunnel hand-off procedure is triggered, citing Verma [0028, 0029] and the abstract.

First, the Appellants note that claim 17 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Barna in view of Krishnamurthi. Verma is not cited in the rejection of any of the pending claims. Second, the Appellants submit that Verma does not teach or suggest what is claimed. The Verma abstract reads as follows (emphasis added):

A method and system are shown for handing off a communication stream between a mobile node and a communication endpoint from a first connection initiator to a second connection initiator while maintaining call state for the communication stream. The first connection initiator establishes a first connection to the communication endpoint in response to receiving a first connection request from the mobile node that includes a client identifier value for the mobile node. **When the first connection initiator detects loss of communication with the mobile node, it sends a call-disconnect-notify (CDN) message having a cause code set to a handoff value to the connection endpoint.** The connection endpoint, in response to the CDN message, stores call information for the first connection along with the mobile node's client identifier value. The first connection initiator also broadcasts a user-moved message that includes the mobile node's client identifier value and the first connection initiator's call information for the first connection. The second connection initiator, upon receiving the user-moved message, stores the first connection initiator's call information from the message along with the mobile node's client identifier value. When the second connection initiator receives a second connection request from the mobile node having the mobile node's client identifier value, it retrieves the call information from the user-moved message using the client identifier value and sends a tunnel-handoff-request message, which includes the client identifier value, to the connection endpoint. The connection endpoint retrieves its

call information for the first connection using the client identifier value and sends a tunnel-handoff-response message to the second connection initiator. The second connection initiator and the connection endpoint then resume the communication stream using the call information for the first connection.

Verma [0028-0029] reads as follows (emphasis added):

[0028] An embodiment of a method for handing off a communication stream in a communications system, according to the present invention, involves receiving a first connection request from a client, where the first connection request includes a client identifier value for the client and, responsive to the first connection request, establishing a first connection from a first connection initiator to a connection endpoint. **The method also calls for sensing loss of communication between the client and the first connection initiator and, responsive thereto, transmitting a disconnect message to the connection endpoint, where the disconnect message includes a predetermined handoff code.** Responsive to receiving the disconnect message having the handoff code, the method sets forth storing a first set of call information for the first connection from the connection endpoint along with the client identifier value and broadcasting a user moved message from the first connection initiator, where the user moved message includes the client identifier value and a second set of call information for the first connection from the first connection initiator. The method also includes receiving the user moved message in a second connection initiator and, responsive thereto, storing the second set of call information included with the user moved message along with the client identifier value. The method then sets forth receiving a second connection request from the client at the second connection initiator, where the second connection request includes the client identifier value, retrieving the second set of call information using the identifier value for the client, and sending a handoff request message to the connection endpoint, where the handoff request message includes the client identifier value from the second connection request. Responsive to the handoff request message, the method calls for retrieving the first set of call information from using the identifier value for the client and establishing a second connection from the second connection initiator, where the second initiator uses the second set of call information, to the connection endpoint, where the connection endpoint uses the first set of call information.

[0029] An embodiment of a network communication system, according to the present invention, includes a first connection initiator device coupled to a network. The first connection initiator has a first network address and is configured to communicate with a mobile client broadcasting within a first service area of the first connection initiator. The first connection initiator is further configured to receive a first connection request from the mobile client that includes a client identifier value for the mobile client and, responsive to the first connection request, obtain a second network address corresponding to the client identifier value, and establish a first connection between the first and second network addresses. **The first connection initiator is also configured to detect that the mobile client has left the first service area and, responsive thereto, transmit a disconnect message having a predetermined handoff code to the second network**

address and transmit a user moved message to a predetermined network broadcast address, where the user moved message includes a first set of call state information from the first connection initiator that pertains to the first connection. The network system also includes a connection endpoint device that is coupled to the network, has the second network address, and is configured to establish the first connection between the first and second network addresses. The connection endpoint is further configured to receive the disconnect message having the predetermined handoff code and, responsive thereto, store a second set of call state information from the connection endpoint that pertains to the first connection along with the client identifier value. The connection endpoint is still further configured to receive a handoff request message from a third network address, where the handoff request message contains the client identifier value, and, responsive thereto, retrieve the second set of call state information and establish a second connection between the second and third network addresses using the second set of call state information. And finally, the network system includes a second connection initiator device coupled to the network, having the third network address. The second connection initiator device is configured to receive the user moved message transmitted to the predetermined network broadcast address and store the first set of call state information along with the client identifier value. The second connection initiator is also configured to communicate with the mobile client broadcasting within a second service area of the second connection initiator and receive a second connection request from the mobile client that includes the client identifier value. Responsive to the second connection request, the second connection initiator is further configured to retrieve the first set of call state information, send the tunnel handoff request message to the second network address, and establish the second connection between the second and third network addresses using the first set of call state information.

Thus, Verma, as cited by the Examiner, is clearly describing scenarios in which communication with the mobile is lost and a disconnection occurs.

The Appellants submit that this is substantively different from and does not suggest the triggering of PPP link establishment by the beginning of a period of low remote unit data activity. The Appellants submit that low data activity is data activity, albeit a low level of data activity. In contrast, the loss of communication cannot be characterized as data activity, since it is communication which has ceased and is no longer active at all. In all three paragraphs cited by the Examiner, Verma detects the loss of communication / the leaving of a service area and responsively sends disconnect messaging.

Since neither Barna, Krishnamurthi nor Verma, either independently or in combination, teaches all of the limitations of independent claim 17, or therefore, all the limitations of dependent claims 18-20 or 23-26, it is asserted that neither anticipation nor a prima facie case for obviousness has been shown by the Examiner. Appellants submit that claims 17-20 and 23-26

are fully patentable over the cited reference and request that the Examiner be REVERSED.

Group 2 – Claims 29-32

Claim 29 provides (underlined language being relevant to the argument presented below):

> 29. A target access router (AR) comprising:
> a network interface; and
> a processor, communicatively coupled to the network interface, adapted to receive, via the network interface, PPP context information from a source AR and adapted to establish, via the network interface, a PPP link between the target AR and a remote unit using the PPP context information and adapted to receive traffic information via the network interface and a tunnel between the source AR and the target AR, wherein the beginning of a period of low remote unit data activity triggers establishing the PPP link.

In the Final Office Action mailed January 12, 2006 (hereinafter "FOA"), the Examiner cites Barna [0015, 0016, 0034-0037] and Krishnamurthi [0006-0009, 0019-0024] and the Krishnamurthi abstract as teaching the language of claim 29. In the *Response to Arguments* section of the FOA, the Examiner asserted that the beginning of a period of low remote unit data activity was not recited in the rejected claim. In response, the Appellants submitted that claim 29 includes the language, "wherein the beginning of a period of low remote unit data activity triggers establishing the PPP link." In the Advisory Action mailed April 24, 2006, the Examiner responds by asserting that Verma discloses that when the connection indicator detects loss of communication with the mobile node then the tunnel hand-off procedure is triggered, citing Verma [0028, 0029] and the abstract.

First, the Appellants note that claim 29 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Barna in view of Krishnamurthi. Verma is not cited in the rejection of any of the pending claims. Second, the Appellants submit that Verma does not teach or suggest what is claimed. The Verma abstract and [0028-0029] are quoted above in the argument presented for claim 17, with emphasis added. From the portions of Verma cited by the Examiner, Verma appears to be clearly describing scenarios in which communication with the mobile is lost and a disconnection occurs.

The Appellants submit that this is substantively different from and does not suggest the

triggering of PPP link establishment by the beginning of a period of low remote unit data activity. The Appellants submit that low data activity is data activity, albeit a low level of data activity. In contrast, the loss of communication cannot be characterized as data activity, since it is communication which has ceased and is no longer active at all. In all three paragraphs cited by the Examiner, Verma detects the loss of communication / the leaving of a service area and responsively sends disconnect messaging.

Since neither Barna, Krishnamurthi nor Verma, either independently or in combination, teaches all of the limitations of independent claim 29, or therefore, all the limitations of dependent claims 30-32, it is asserted that neither anticipation nor a prima facie case for obviousness has been shown by the Examiner. Appellants submit that claims 29-32 are fully patentable over the cited references and request that the Examiner be REVERSED.

(8) Conclusion

For the above reasons, the appellants respectfully submit that the rejection of claims 17, 20, 23-26, 29, 31 and 32 under 35 U.S.C. § 103(a) as being unpatentable over Barna in view of Krishnamurthi and the rejection of claims 18, 19 and 30 under 35 U.S.C. § 103(a) as being unpatentable over Barna and Krishnamurthi in view of Lioy are in error and should be reversed and the claims allowed.

Lastly, please charge any additional fees (including extension of time fees) or credit overpayment to Deposit Account No. **502117 -- Motorola, Inc**.

Respectfully submitted,
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(9) Claims Appendix

1-16. (canceled)

17. (previously presented)A method for point-to-point protocol (PPP) link handoff comprising:

receiving, by a target access router (AR), PPP context information from a source AR;

establishing, by the target AR, a PPP link between the target AR and a remote unit using the PPP context information; and

receiving traffic information via a tunnel between the source AR and the target AR, wherein the beginning of a period of low remote unit data activity triggers establishing the PPP link.

18. (original) The method of claim 17, further comprising negotiating, by the target AR with the remote unit, PPP parameters not received by the target AR from the source AR.

19. (original) The method of claim 18, further comprising:

determining that at least a portion of the PPP context information is not applicable to the target AR; and

negotiating, by the target AR with the remote unit, PPP parameters corresponding to the PPP context information determined to not be applicable to the target AR.

20. (previously presented)The method of claim 17, wherein receiving the PPP context information and receiving the traffic information occur concurrently.

21. (canceled)

22. (canceled)

23. (previously presented)The method of claim 17, further comprising determining when the tunnel will expire based on a tunnel lifetime, wherein establishing the PPP link comprises establishing the PPP link based on when the tunnel will expire.

24. (previously presented)The method of claim 17, further comprising determining when the tunnel will expire based on a tunnel lifetime and extending the lifetime of the tunnel in order to establish the PPP link before the tunnel expires.

25. (previously presented)The method of claim 17, further comprising:

establishing a network layer link between the target AR and the remote unit using the PPP link.

26. (original) The method of claim 25, further comprising:

tearing down the tunnel between the source AR and target AR after establishing the network layer link.

27-28. (canceled)

29. (previously presented) A target access router (AR) comprising:

a network interface; and

a processor, communicatively coupled to the network interface, adapted to receive, via the network interface, PPP context information from a source AR and adapted to establish, via the network interface, a PPP link between the target AR and a remote unit using the PPP context information and adapted to receive traffic information via the network interface and a tunnel between the source AR and the target AR, wherein the beginning of a period of low remote unit data activity triggers establishing the PPP link.

30. (original) The target AR of claim 29, the processor is further adapted to negotiate, with the remote unit via the network interface, PPP parameters not received by the target AR from the source AR.

31. (original) The target AR of claim 29, wherein the target AR comprises a packet data serving node (PDSN).

32. (original) The target AR of claim 29, wherein the target AR comprises a GPRS gateway support node (GGSN).

(10) Evidence Appendix

Not applicable.

(11) Related Proceeding Appendix

Not applicable.